

OCT 21 2005

**VERTEX® Reconstruction System**  
**510(k) Summary**  
**September 2005**

- I.     **Company:**                     Medtronic Sofamor Danek USA, Inc.  
  1800 Pyramid Place  
  Memphis, Tennessee 38132
- Contact:**                     Richard W. Treharne  
  Sr. Vice President Regulatory Affairs  
  (901) 396-3133
- II.    **Product Name:**             VERTEX® Reconstruction System  
          **Classification Name:**    Spinal Interlaminar Fixation Orthosis  
  Pedicule Screw Spinal System
- Regulation Number:**    888.3050, 888.3070
- Code:**                     KWP, MNI

III.   **Description:**

The VERTEX® Reconstruction System is a posterior system, which consists of a variety of shapes and sizes of rods, hooks, screws, multi-axial screws, and connecting components, which can be rigidly locked to the rod in a variety of configurations, with each construct being tailor-made for the individual case. Titanium ATLAS® cable may be used with this system at the surgeon's discretion.

The VERTEX® Reconstruction System is fabricated from medical grade titanium or titanium alloy. The VERTEX® Reconstruction System also includes a retaining ring for the multi-axial screw made of Shape Memory Alloy (Nitinol – NiTi). Shape Memory Alloy is compatible with titanium or titanium alloy implants only. **Do not use with stainless steel. Never use stainless steel and titanium implant components in the same construct.**

To achieve best results, do not use any of the VERTEX® Reconstruction System implant components with components from any other system or manufacturer unless specifically allowed to do so in this or another Medtronic Sofamor Danek document. As with all orthopedic and neurosurgical implants, none of the VERTEX® Reconstruction System components should ever be reused under any circumstances.

The purpose of this submission was to add the KEEL Plate to the system, to expand the use of the VERTEX® M6 Set Screws to include the occiput and to correct a clerical error related to the 4.0mm and 4.5mm cortical screws.

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#### **IV Indications**

When intended to promote fusion of the occipitocervical spine, cervical spine, and the thoracic spine, (Occiput-T3), the VERTEX® Reconstruction System is indicated for the following: DDD (neck pain of discogenic origin with degeneration of the disc confirmed by history and radiographic studies), spondylolisthesis, spinal stenosis, fracture, dislocation, failed previous fusion and/or tumors.

##### ***Occipitocervical Plate/Rod/Occipital Screws/Hooks***

The occipitocervical plate/rods, occipital screws (3.5mm, 4.0mm and 4.5mm cancellous along with 4.0mm and 4.5mm cortical), and hooks are intended to provide stabilization to promote fusion following reduction of fracture/dislocation or trauma in the occipitocervical junction and the cervical spine. When used to treat these occipitocervical and cervical conditions, these screws are limited to occipital fixation only. The screws are not intended to be placed in the cervical spine.

The use of the occipitocervical plate/rod requires bilateral fixation to C2 and below. **Note:** segmental fixation is recommended for these constructs.

##### ***Hooks and Rods***

The hooks and rods are also intended to provide stabilization to promote fusion following reduction of fracture/dislocation or trauma in the cervical/upper thoracic (C1-T3) spine.

##### ***Multi-axial Screws/Connectors***

The use of multi-axial screws (3.5mm and 4.0mm cancellous, and 4.0mm cortical) are limited to placement in T1-T3. The screws are not intended to be placed in the cervical spine.

The titanium ATLAS® Cable System to be used with the VERTEX® Reconstruction System allows for cable attachment to the posterior cervical or thoracic spine.

#### **V. Substantial Equivalence:**

A risk analysis was provided demonstrating that the subject VERTEX® Reconstruction System components are substantially equivalent to VERTEX® pre-curved occipital plate/rod components previously cleared in K052402, and to the set screws cleared in K052180 and K042498.

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OCT 21 2005

Food and Drug Administration  
9200 Corporate Boulevard  
Rockville MD 20850

Richard W. Treharne, Ph.D.  
Senior Vice President, Regulatory Affairs  
Medtronic Sofamor Danek  
1800 Pyramid Place  
Memphis, Tennessee 38132

Re: K052734

Trade/Device Name: VERTEX® Reconstruction System  
Regulation Number: 21 CFR 888.3070  
Regulation Name: Pedicle screw spinal system  
Regulatory Class: II  
Product Code: MNI, KWP  
Dated: September 29, 2005  
Received: September 30, 2005

Dear Dr. Treharne:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to such additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.

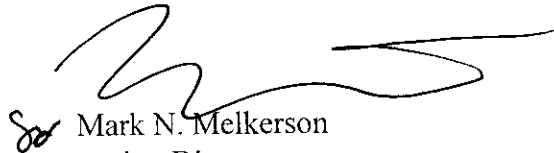
Please be advised that FDA's issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act's requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

Page 2- Richard W. Treharne, Ph.D.

This letter will allow you to begin marketing your device as described in your Section 510(k) premarket notification. The FDA finding of substantial equivalence of your device to a legally marketed predicate device results in a classification for your device and thus, permits your device to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please contact the Office of Compliance at (240) 276-0120. Also, please note the regulation entitled, "Misbranding by reference to premarket notification" (21CFR Part 807.97). You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 443-6597 or at its Internet address <http://www.fda.gov/cdrh/industry/support/index.html>.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Mark N. Melkerson", with a stylized flourish at the end.

Mark N. Melkerson  
Acting Director  
Division of General, Restorative,  
and Neurological Devices  
Office of Device Evaluation  
Center for Devices and  
Radiological Health

Enclosure

September 2005

510(k) Number (if known): K052734Device Name: VERTEX® Reconstruction System**Indications for Use:**

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***Occipitocervical Plate/Rod/Occipital Screws/Hooks***

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***Hooks and Rods***

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Titanium ATLASTM Cable System used with the VERTEX® Reconstruction System allows for cable attachment to the posterior cervical or thoracic spine.

Prescription Use   X    
(Part 21 CFR 801 Subpart D)

AND/OR

Over-The-Counter Use             
(21 CFR 807 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

**(Division Sign-Off)**

Concurrence of CDRH, Office of Device Evaluation (ODE)

**Division of General, Restorative,  
and Neurological Devices**

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